

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.

Oakland, CA 94607

(510) 622-5660, (510) 286-0550 fax

*Flex your power
Be energy efficient!*

July 17, 2009

Contract No. 04-0120F4

04-SF-80-13.2 / 13.9

Self-Anchored Suspension Bridge

Letter No. 05.03.01-004687

Michael Flowers

Project Executive

American Bridge/Fluor, A JV

375 Burma Road

Oakland, CA 94607

Dear Michael Flowers,

Magnetic Particle Testing on OBG Deck Section Welds

The Department has reviewed ABF-CAL-LTR-000961, dated July 1, 2009, and is encouraged that ABF is taking preventative measures to ensure necessary quality. We look forward to receiving the report of your investigation into these missed indications as requested in State Letter 05.03.08-000020, and would like to learn what preventative actions ABF will take in the future to prevent missed indications.

Regarding ABF-CAL-LTR-000961, we offer the following comments:

1. The second paragraph which speculates on the possible outcome had the Department inspected areas different from those originally inspected by the Fabricator is unfounded, as the Department only inspected 10% of the areas originally inspected by the Fabricator's quality control operation.
2. It is not clear why CCO 22 is referenced, as it does not contain any language regarding lot testing (Also, Note 5 of the NDE Table, limits lot testing of welds to <1.5 m in length).
3. The low reported rejection rates on pages 2 – 4 are misleading. It has been shown that, based upon the Department's MT results, many of the indications are transverse cracks, which have a very short weld length. Although the accumulation of these short weld lengths results in a very low calculated rejection rate, your data does not indicate the seriousness associated with the presence of transverse cracks in the work. Transverse cracks are not common in the steel bridge fabrication industry, and if not properly repaired, are of great concern structurally as they could propagate into the adjacent base metal. Further, transverse cracks are often associated with insufficient preheat which may be related to the recent quality issues. The Department does not consider 15 indications in a floor beam a minimal amount, and therefore takes exception to your conclusion that states, "*a minimal amount of undetected defects have been revealed.*"
4. Had the Fabricator's quality control operation identified cracks and linear indications in the welds, escalation of NDT testing would have been required as provided for in Note 3 of the NDE table in the Special Provisions. This was not implemented. For example, Panel Point 19, weld SSD15-PP019 has a total of 13 transverse cracks and one longitudinal crack, and Panel Point 20, weld SSD16-PP020 has a total of 16 transverse cracks. If magnetic particle inspection had been completed effectively, it is probable that the amount of contract testing required would have escalated up to 100% of the weld length. This 100% weld testing would have been a contract requirement rather than an "over-check" as characterized in the letter.

ABF's efforts and focused attention to audit ZPMC's QC is appropriate and appreciated. The Department desires to continue working with ABF to resolve this issue. Please contact Doug Coe at 137-6132-2704 if you would like to discuss these issues further or have any questions.

Sincerely,



GARY PURSELL
Resident Engineer

cc: Rick Morrow
Peter Siegenthaler
Doug Coe
Mazen Wahbeh
file: 05.03.01